

**REMARKS**

Claims 59, 68-75, 77, and 78 are pending in this application. Claims 1-58, 60-67, and 76 were previously cancelled. Claims 59, 68-75, and 78 have been amended. Support for the claim amendments can be found in Figures 1 to 3.

This response presents no new matter and raises no new issues. In view of the preceding amendments and the following remarks, the applicants respectfully request reconsideration of the above-identified application.

The applicants are grateful to the Examiner for withdrawing the rejections based on 35 U.S.C. §103(a) and the judicially created obviousness-type double patenting, as listed on pages 6-8 of the Office Action dated October 19, 2007.

***The Claimed Invention***

In brief, the claims cover a method for determining between a malignant thyroid tumor and a benign thyroid tumor, particularly by measuring thyroglobulin ("Tg") in a fluid sample and performing, among others, the following step:

(iii) when the calculated ratio is significantly **different** from that of the reference fluid sample of the malignant thyroid.

Once a thyroid tumor is found in a patient by the standard methods of diagnostic imaging, such as X-ray examination or echography, it is difficult to determine whether the thyroid tumor is malignant or benign by diagnostic imaging alone. Therefore, once a thyroid tissue has been found to be

normal or not, the claimed invention can be used to perform the important step of determining whether the thyroid tumor is malignant or benign. When the calculated ratio of the patient is **different** from the ratio of the reference fluid sample of a benign thyroid, the tumor of the patient can be determined as malignant.

As can be seen from the following table which summarizes Figures 1 to 3 of the specification, the percent amount ratio of malignant is different from the ratio of benign, i.e., very little (12.5%) to no (0%) overlap occurred between the amount ratio of malignant and amount ratio of benign:

	Total Number	Number of data that overlapped with benign (%)
Fig. 1	11	1 (9.1%)
Fig. 2	8	1 (12.5%)
Fig. 3	4	0 (0%)

Clearly, Figures 1 to 3 support the claimed invention which determines the malignancy of thyroid tumors by evaluating the difference between the calculated ratio and malignant ratio.

***Claim Rejections – 35 U.S.C. §112***

**In the Office Action, claims 59, 68-75, 77, and 78 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.**

In particular, it was asserted that the comparison rules in the step of determining whether a sample is from a benign thyroid tumor introduces new matter into the specification as originally filed.

Claims 59, 68-75, 77, and 78 have been amended to recite the following:

(iii) when the calculated ratio is ~~significantly higher than that of the reference fluid sample of the normal thyroid and is significantly~~ different from ~~lower than~~ that of

the reference fluid sample of the malignant thyroid.

Figures 1 to 3 (summarized in the table above) fully support the recited step for determining whether a sample is from a benign thyroid tumor or a malignant thyroid tumor by comparing the difference between the calculated ratio and the malignant ratio.

With respect to the assertion that “examination of Figures 1, 2 and 3, show that per se rules cannot be formed for the entire genus of thyroid disease,” it should be noted that the claimed invention is a method for determining whether a thyroid tumor is **malignant or benign**, not whether a thyroid tumor is normal or not. As discussed above, the claimed invention is not directed to determining the normalcy of a thyroid which is performed in clinical laboratory tests according to standard methods of diagnostic imaging, such as X-ray examination and echography. Rather, the claimed invention is directed to determining **whether the thyroid tumor is benign or malignant**, which cannot be shown by diagnostic imaging alone.

In summary, the claimed invention recites a method for determining **whether the thyroid tumor is benign or malignant** by comparing the **difference** between the calculated ratio and the malignant ratio, as supported by Figures 1 to 3. Clearly, the claimed invention is fully supported by the specification as originally disclosed and, as amended, claims 59, 68-75, 77, and 78 do not present new matter. Accordingly, the applicants respectfully request that this rejection be reconsidered and withdrawn.

**In the Office Action, claims 59, 68-75, 77, and 78 were rejected under 35 U.S.C. §112, first paragraph, because the specification, while being enabling for methods comprising the active steps recited in the claims of measuring amounts of different types of thyroglobulin based on their different lectin reactivity, does not reasonably provide enablement for the**

**methods that further comprise steps where comparison rules are used in determining whether a thyroid is malignant or benign as currently recited in the claims.**

In particular, it was asserted that the applicants' data conflicts with the claimed method for distinguishing a malignant tumor from a benign tumor by evaluating whether a calculated ratio is significantly lower than a malignant standard and also significantly higher than a normal ratio. The applicants respectfully submit that this rejection is moot in light of the claim amendments discussed above. Specifically, as amended, claims 59, 68-75, 77, and 78 recite a determination step wherein the comparison is based on "(iii) when the calculated ratio is ~~significantly higher than that of the reference fluid sample of the normal thyroid and is significantly~~ different from lower than that of the reference fluid sample of the malignant thyroid."

Furthermore, Figures 1 to 3 of the specification fully support the amended claims, which recite a step wherein the malignancy of a thyroid tumor is determined by evaluating the difference between the calculated ratio and the malignant ratio. Therefore, the specification is clearly enabling in terms of amended claims 59, 68-75, 77, and 78.

Accordingly, considering that this rejection is moot in light of the claim amendments, and that Figures 1 to 3 clearly enable the instant invention recited in amended claims 59, 68-75, 77, and 78, the applicants respectfully request reconsideration and withdrawal of this rejection.

In view of the above amendment, the applicants believe the pending application is in condition for allowance.

Dated: April 21, 2008

Respectfully submitted,

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